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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,511	02/16/2005	Sang-Soo Kwak	WON-0003	9215
7590 01/04/2006 Jane Massey Licata Kathleen A Tyrrell Licata & Tyrrell 66 East Main Street Marlton, NJ 08053			EXAMINER MARTIN, PAUL C	
			ART UNIT 1655	PAPER NUMBER
DATE MAILED: 01/04/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/519,511	Applicant(s) KWAK ET AL.	
	Examiner Paul C. Martin	Art Unit 1655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/23/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claims 1-7 are pending in this application and were examined on their merits.

Drawings

The informal drawings (Fig.2) are not of sufficient quality to permit examination. The individual wells are not so labeled as to ascertain which contain treated vs. control, if any. Accordingly, replacement drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to this Office action. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

Applicant is given a TWO MONTH time period to submit new drawings in compliance with 37 CFR 1.81. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a). Failure to timely submit replacement drawing sheets will result in ABANDONMENT of the application.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 3 encompasses all potential plant cell growth regulators from all possible synthetic compounds, natural compounds, plant extracts and fractions, and extracts containing microorganism culture solutions.

The MPEP states that for a generic claim the genus can be adequately described if the disclosure presents a sufficient number of representative species that encompass the genus. MPEP § 2163. If the genus has a substantial variance, the disclosure must describe a sufficient variety of species to reflect the variation within that genus. MPEP § 2163. Although the MPEP does not define what constitute a sufficient number of representative species, the courts have indicated what do not constitute a representative number of species to adequately describe a broad generic.

In re Gostelli, the courts determined that the disclosure of two chemical compounds within a subgenus did not describe the subgenus. *In re Gostelli*, F.2d at 1012, USPQ2d at 1618.

As stated *supra*, the MPEP states that the written description for a genus can be achieved by a representative number of species within a broad generic. It is unquestionable, that Claim 3 is a broad generic, with respect to all possible plant cell growth regulators from all possible synthetic compounds, natural compounds, plant extracts and fractions, and extracts containing microorganism culture solutions. The possible variations just within the class of synthetic compounds known and unknown are limitless, and examples reflecting the variety of possible species in the genus are not provided. Several species of herbicide are provided in the instant specification, however it is not clear from which category of claimed growth regulator they are representative of.

Accordingly, it is deemed that the specification fails to provide adequate written description for the genus of the claims and does not reasonable convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the entire scope of the claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Bhide *et al.* (US 6,150,158).

Bhide *et al.* teaches a method for high throughput screening of plant growth regulators comprising the steps of culturing photomixotrophic cells (Column 5, Lines 50-67) to which candidates for plant cell growth regulators were added (Column 7, Table 2) and measuring cell growth on a large scale at the same time (Column 23, Lines 34-61).

Bhide *et al.* teaches the use of *Nicotiana tabacum* photomixotrophic cells.
(Column 6, Table 1)

Bhide *et al.* teaches the use of plant growth regulators selected from synthetic and natural compounds. (Column 7, Table 2).

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Bhide *et al.* teaches the use of microwell plates in culture. (Column 5, Lines 6-48).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner *presumes* that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhide *et al.* (US 6,150,158) in view of Byth *et al.* (2001).

The teachings of Bhide *et al.* were discussed *supra*.

Byth *et al.* teaches a method of quantitatively assessing the viability and/ or proliferation of plant cell cultures by measuring the optical density after treatment with 2,3,5-triphenyltetrazolium chloride (TTC) comprising the steps of:

Culturing the cells (Page 341, Column 2, Lines 1-22), treating the cells with 2,3,5-triphenyltetrazolium chloride for 3 hours, reacting the TTC with 95% ethanol (for 16 hours at room temperature) after removing other solutions, transferring the reacting solution to a new microwell plate, and measuring the optical density with a high throughput screening reader. (Page 342, Column 1, Lines 4-14)

It would have been obvious to the ordinary artisan at the time of the instant invention to use the TTC assay method as a means of assessing the cell proliferation and/or viability of plant cell cultures as an alternate method to the plant biomass, chlorophyll, reporter gene and luminescent protein assays taught by Bhide *et al.* because it is sound scientific practice to have as much confirming data from a variety of sources to assure the accuracy of reported results.

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As stated by Byth *et al.* the TTC assay can "detect cell proliferation over a wider range of cell densities" than at least one other assay. The ordinary artisan with skill in the art, would have known that variations in treatment with TTC and reaction with ethanol would likely vary based on the type and amount of cells used in each assay. The ordinary artisan would have had a reasonable expectation of success in using the TTC assay in combination with the teachings of Bhide *et al.* based on the success of the assay in previous studies and the length of time it has been known and used in the art.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole is *prima facie* obvious to one with ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

No Claims are allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul C. Martin whose telephone number is 571-272-3348. The examiner can normally be reached on M-F 8am-5pm.

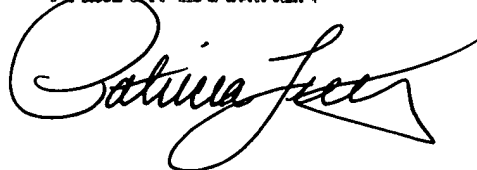
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on 571-272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paul Martin
Examiner
Art Unit 1655

12/16/05

PATRICIA LEITH
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read 'Patricia Leith', written over the printed name and title.